



JPW

Attorney Docket No.: 047373-0148

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Noriyuki UMEZAWA et al.

Title: METHOD AND APPARATUS FOR
DISCRIMINATING TONER BOTTLE TYPES,
STIRRING TONER, AND DETECTING THE
AMOUNT OF REMAINING TONER

Reissue Appl. No.: 10/658,849

Reissue Filing Date: 09/10/2003

Examiner: Q. Grainger

Art Unit: 2852

SECOND SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §1.56

Mail Stop REISSUE
Commissioner for Patents
PO Box 1450
Alexandria, Virginia 22313-1450

Sir:

This statement is supplemental to the Information Disclosure Statement filed on April 16 and June 2, 2004.

FURTHER STATEMENTS OF RELEVANCE OF DOCUMENTS

The following provides a supplemental statement of relevance to certain references cited in the Information Disclosure Statement filed on April 16, 2004.

I. A157 - JP (U) 5-40112

The following is a machine translation obtained by Applicant's representative:

[Claim 1] The pointing device of the cylinder container characterized by to have the turntable which said cylinder container is carried and makes rotate shaft orientations for said cylinder container as a core in the pointing device of the cylinder container which positions the cylinder container with which the bar code was printed by the side face in the specific

direction, the bar code detector which are countered and formed in the side face of said cylinder container, and detect said bar code, and the control unit which make suspend rotation of said turntable based on the signal from this bar code detector.

[Claim 2] In the pointing device of the cylinder container which positions the cylinder container with which the bar code was printed by the side face in the specific direction The turntable which said cylinder container is carried and is made to rotate shaft orientations for said cylinder container as a core, The pointing device of the cylinder container characterized by having the bar code detector which is countered and formed in the side face of said cylinder container, and detects said bar code, and the control unit which emits the signal of the purport that said cylinder container became a predetermined location based on the signal from this bar code detector.

[Claim 3] The positioning approach of the cylinder container characterized by for a bar code rotating shaft orientations for said cylinder container as a core, detecting said bar code during this rotation in the positioning approach of a cylinder container of positioning the cylinder container printed by the side face in the specific direction, and pinpointing the location of a cylinder container based on this detection result.

[Detailed explanation of a design]

[0001]

[Industrial Application]

This design is related with the pointing device and the positioning approach of a cylinder container of positioning a cylinder container like for example, an aluminum can in the specific direction.

[0002]

[Description of the Prior Art]

He is trying to print conventionally brands, such as soft drinks with which the interior is filled up, in the front face of a cylinder container like an aluminum can.

[0003]

[Problem(s) to be Solved by the Device]

By the way, since the aluminum can was carrying out the shape of a cylinder when it was

going to arrange the printing side of the front face in the specific direction for an aluminum can, a reference point could not be established in a printing side and an aluminum can was not able to be arranged in the specific direction. Moreover, since the starting point of printing was not decided, either, the printing situation given to the front face of an aluminum can was not able to be inspected automatically.

[0004]

This design was made in view of the above-mentioned situation, and aims at offering the pointing device and the positioning approach of a ***** container applicable even if the brands printed while being able to arrange the cylinder container with a precision sufficient in a specific direction differ.

[0005]

[Means for Solving the Problem]

In the pointing device of the cylinder container with which the design of this application according to claim 1 positions the cylinder container with which the bar code was printed by the side face in the specific direction The turntable which said cylinder container is carried and is made to rotate shaft orientations for said cylinder container as a core, It is characterized by having the bar code detector which is countered and formed in the side face of said cylinder container, and detects said bar code, and the control unit made to suspend rotation of said turntable based on the signal from this bar code detector.

[0006]

In the pointing device of the cylinder container with which the design of this application according to claim 2 positions the cylinder container with which the bar code was printed by the side face in the specific direction The turntable which said cylinder container is carried and is made to rotate shaft orientations for said cylinder container as a core, It is characterized by having the bar code detector which is countered and formed in the side face of said cylinder container, and detects said bar code, and the control unit which emits the signal of the purport that said cylinder container became a predetermined location based on the signal from this bar code detector.

[0007]

In the positioning approach of a cylinder container of positioning the cylinder container with which the bar code was printed by the side face in the specific direction, the design of this application according to claim 3 rotates shaft orientations for said cylinder container as a

core, detects said bar code during this rotation, and is characterized by pinpointing the location of a cylinder container based on this detection result.

[0008]

[Function]

According to the design of this application, the shaft orientations are rotated by the cylinder container as a core, and the bar code printed by the side face of a cylinder container is detected. Here, since the bar code is prepared in the predetermined location of a cylinder container, the location of a cylinder container is pinpointed from the detection result of a bar code.

[0009]

[Example]

With reference to a drawing, one example of this design is explained below.

[0010]

As shown in drawing 1 , the turntable 1 is connected with the motor 3 through the belt 2. If the aluminum can A as a cylinder container is carried on a turntable 1 and a motor 3 is driven, a turntable 1 will rotate and the aluminum can A will rotate shaft orientations as a core. The bar code reader 4 is formed so that the bar code B printed by the side face of the aluminum can A which appeared on the turntable 1 may be countered. This bar code reader 4 is connected to the control unit 5, and the control unit 5 is connected with the motor 3. When it changes to the condition that it can distinguish from the condition that a bar code B cannot be distinguished, or when it changes to the condition that it cannot distinguish from the condition that a bar code B can be distinguished, he is trying to emit a stop signal to a motor 3 in a control device 5.

[0011]

Next, an operation of this example is explained.

[0012]

As shown in drawing 2 and drawing 3 , the aluminum can A on a turntable 1 rotates shaft orientations as a core. Under the present circumstances, the bar code B printed by the side face of the aluminum can A rotates together. When it changes into the condition that a bar code B does not counter a bar code reader 4 as it will be in the condition that a bar code B can be distinguished and is shown in drawing 2 when the rotating bar code B counters a bar code reader 4, as shown in drawing 3 , it will be in the condition that a bar code B cannot be

distinguished. The detection result by the bar code reader 4 is inputted into a control device 5, and when it changes to the condition that it can distinguish from the condition that a bar code B cannot be distinguished, or when it changes to the condition that it cannot distinguish from the condition that a bar code B can be distinguished, a stop signal is emitted towards a motor 3 from a control device 5. Consequently, rotation of the turntable 1 currently driven by the motor 3 is stopped, and the aluminum can A stops with a bar code reader 4 and a predetermined relative position. Therefore, the location of the aluminum can A is pinpointed to a bar code reader 4, and inspection processing of printing performed to next processing, for example, the front face of the aluminum can A, according to this specific result is performed.

[0013]

You may make it emit the signal of the purport that the aluminum can A became a predetermined location to the bar code reader 4, from a control unit, although the stop signal is made to be emitted towards a motor 3 in the above-mentioned example from the control unit 5 when it changes to the condition that it can distinguish from the condition that a bar code B cannot be distinguished, or when it changes to the condition that it cannot distinguish from the condition that a bar code B can be distinguished, without emitting a stop signal on a motor 3. You may make it inspect printing automatically performed to the front face of the aluminum can A with this signal.

[0014]

[Effect of the Device]

Since according to this design shaft orientations are rotated for a cylinder container as a core, a bar code is detected during this rotation and the location of a cylinder container was pinpointed based on this detection result as explained above, it is applicable even if the brands of printing differ.

[Brief Description of the Drawings]

[Drawing 1] It is drawing showing the whole one example configuration of this design.

[Drawing 2] It is a top view for explaining an operation of one example of this design, and is drawing showing the condition that a bar code cannot be distinguished.

[Drawing 3] It is a top view for explaining an operation of one example of this design, and is drawing showing the condition that a bar code can be distinguished.

[Description of Notations]

1 Turntable

2 Belt

3 Motor

4 Bar Code Reader

5 Control Unit

II. A159 - JP (U) 56-66959

Translation of claim

A disposal toner amount detection apparatus, wherein a detection switch detects the amount of the disposal toner by the location change of storage container of toner removed from the image support surface, having a vibration means to vibrate said container to move the container at a faster speed than the detection switch.

III. A160 - JP 63-122939

Further statement of relevance

Code 52 is a plurality of irregularities, for instance, raised patterns (protrusions 54), which are integrally formed with a molded container, and located at the heel of the container in a perpendicular to the axis of the container and curved sequence.

This invention is related to a method to encode the original mold information on the molded container and by reading the codes on the containers, the mold from which the container originated can be identified. In the mass production, it is useful to identify the mold that is producing the defective containers so the problematic mold can be pulled from the production line for repair.

IV. A 161 - JP (U) 62-89672

Translation of claims

Claim 1

An image forming apparatus wherein:
a storage portion of the disposal toner container has a latching member to latch onto said disposal toner container;
said disposal toner container is exchanged at the time of supplying the toner;
fixed divider and the disposal toner container form a first chamber to store the supply toner; and
another cylindrical body where said disposal toner container can be placed is located on said divider side.

Claim 2

An image forming apparatus according to Claim 1, having a fastening means for said cylindrical body and said disposal toner container, which are removable, and a locking portion formed on one outer end of said disposal toner container for engaging with above-mentioned latching member.

V. A 166 - TW 472898

Translation of claims

1. A toner bottle cap to quantitatively discharge toner, which comprises a cylindershaped tube (1) with a one-way (unidirectional) opening, an rim (11) at the opening of the tube (1), and a spiral groove (111) extended from the bottom to the top on the inner surface of the tube (1), and is characterized by: a cap (2) is placed on the rim (11) of the tube (1); a control unit (22) is positioned close to the edge of the cap surface, extended from the appropriate side; a drainage slant (221) is formed on the coaxial side of the control unit (22) and the spiral groove (111); an input opening (23) is situated at an appropriate position on the

outer surface of the control unit (22); so that, when the toner (3) inside the tube (1) reaches the cap (2) through the spiral groove (111) during rotation, it (3) will be guided to the control unit (22) by the drainage slant (221), then it will be evenly supplied to the copier through the input opening (23) to effect quantitative supply of toner.

2. A toner bottle cap according to claim 1, wherein said rim (11) and said cap (2) are connected by a method selected from the group comprising of spiral connection, glue connection, link-and-buckle connection, and unitary connection.

VI. B1 - JP (U) 2-16366

Translation of claim

Toner supply apparatus with double layered cylindrical cases having an exit slots for toner on a part of each cylinder wall, wherein:
supply toner is put in to the inner cylinder;
toner is dropped when said slots are met;
said outer cylindrical case has a cover member of which one end is fixed and the other end has glue pasted thereon and can close said slot; and
a press member can press the cover member to close up said slot, after one end of said cover member is ripped and the toner is supplied out of said slot, by rolling said outer cylindrical case.

In addition, attached is a courtesy copy of document A126, DE 298 13 603, requested by the Examiner.

Applicants respectfully request that any listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 (provided on April 16, 2004) be returned in accordance with MPEP §609.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 CFR §§ 1.16-1.17, or credit any overpayment, to

Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

Respectfully submitted,

Date May 12, 2005

By Thomas S. Bilal

FOLEY & LARDNER LLP
Customer Number: 22428
Telephone: (202) 945-6162
Facsimile: (202) 672-5399

Pavan K. Agarwal
Attorney for Applicants
Registration No. 40,888